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all in a loose coil on my head and shoulder, but as quick as a flash twined himself about my neck, with the hinder third of his body twisted about my arm at the arm-pit. Rearing his head within a few inches of my face, and rapidly quivering his tongue at me, he was quite a picture to behold. It required but a moment or two, however, for me to demonstrate to this hardy and soot-tinted representative of the reptilian race that he had attacked a quarry entirely too big for his powers,—though I confess he warped down his constricting coils in a manner not to be despised as coming from so small a snake. Seizing him near the head, and leaning my gun against a tree, by three or four vigorous pulls I soon disengaged him, and his disappointed snakeship was taken home alive. He measured something less than six feet.—R. W. SHUFELDT, *Takoma, D. C., February 24th, 1891.*

ARCHEOLOGY AND ETHNOLOGY.[1]

International Congress of Anthropology and Prehistoric Archeology.—*Tenth Session, Paris, August 19 to 27, 1889.*—This congress grew out of the meeting at Spezzia, in Italy, in September, 1865, of four gentlemen of high reputation in connection with studies relative to prehistoric anthropology: Capellini, of Bologna; Gabriel de Mortillet, of Paris; Steenstrup, of Copenhagen; and Stoppani, of Italy. To further the organization, a meeting was agreed upon to be held at Neuchatel, in Switzerland, in the year following, 1866, and the organization was completed and the congress established at the meeting in Paris in 1867. The subsequent meetings were as follows: 1868, London and Norwich; 1869, Copenhagen; 1871, Bologna; 1872, Brussels; 1874, Stockholm; 1876, Budapest; 1878, Paris; 1880, Lisbon. Subsequent meetings were arranged for Rome and Athens, but were defeated by rumors of pestilence and war. The tenth session was organized to be held at Paris in the year 1889, thereby taking advantage of the French exposition and the many opportunities for study afforded, as well as the number of foreigners who would be in attendance.

The meetings were well attended, and brought together the most illustrious scientists of various nations. The influence of the congress was highly beneficial, and it deserved support. Not only did distant anthropologists and prehistoric archæologists become acquainted with each other, but they had a chance there to present new discoveries and announce new theories. The congresses act as an international clearing-house, and enable the scientists of the world to compare notes, and, if needs be, correct their errors. That the importance of these congresses has been recognized by the European anthropologists is demonstrated by the numbers in attendance, the average of which has been 588 members, while the session at Stockholm counted 1,642 adherents. The foreigners usually number about one-half the attendance. The average representation, stated by countries or nations, has been as follows: France, 126; Sweden, 115; Great Britain, 70; Belgium, 68; Italy, 45; Denmark, 41; Austria-Hungary, 35; Germany, 20; Portugal, 10; Russia, 8; Netherlands, Norway, and Finland, each 6; Switzerland and Roumania, each 5; United States of America, 4; Luxemburg, 2; Brazil, Greece, Turkey, Argentine Republic, each 1; all other nations taken together, 4.

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[1] Edited by Dr. Thomas Wilson, Smithsonian Institution, Washington, D. C.

A permanent council had general supervision of the affairs of the congress, but a committee of organization was charged with the duty of preparation.

The program for this session, as agreed upon by this committee and published in advance, was as follows: Monday, August 19th, 1889, 2 o'clock P.M. Address of the president. Report of the secretary-general. Election of the bureau and council. Additional by-laws.—Tuesday, August 20th, 1889, 9.30 A.M. Visit to the Museum of Natural History in the galleries of anthropology and paleontology. 2.00 P.M., regular meeting in the amphitheatre of the College of France.—Wednesday, August 21st, 1889, 9.00 A.M., meeting at College of France. 1.00 P.M., reception of the members of the congress by the municipality of Paris at the Hotel de Ville at 4.00 P.M.—Thursday, August 22d, 1889. Visit to the colonial display at the exposition. Rendezvous on the Esplanade des Invalides at the Tunisian Pavilion, 9.30 A.M. Visit to the exposition, section of anthropology, 2.00 P.M., and afterwards to the Museum of the Trocadero.—Friday, August 23d, 1889. Meeting at College of France, 9.00 A.M. and 2.00 P.M.—Saturday, August 24th, 1889. Excursion to Saint-Germain by steamer on the Seine, and visit to the museum. —Sunday, August 25th, 1889. Meeting at College of France, 9.00 A.M., and closing session at 2.00 P.M.—Monday, August 26th, 1889. Excursion by rail to Chelles, the great paleolithic station.

The questions proposed by the committee for discussion before the congress were as follows: 1. Denudation and filling of the valleys, filling of the caverns, and their relations to the antiquity of man. 2.

The periodicity of glacial phenomena. 3. Art and industry in the alluvial and in the caverns. Paleontologic and archeologic classifications, and their value as applied to the Quaternary period. 4. The chronological relation between the civilization of the ages of stone, of bronze, and of iron. 5. The relation between the civilizations of Hallstadt and similar Danubian prehistoric stations, and the civilization of Mycenæ, of Tiryns, of Hissarlik, and of the Caucasus. 6. A critical examination of the skulls and bones of the prehistoric man belonging to the Quaternary period discovered within the past fifteen years. The ethnic elements properly belonging to the ages of stone, bronze, and iron in Central and Western Europe. 7. Ethnographic survivals which may throw light upon the social state of primitive populations of Central and Western Europe. 8. How far do the analogies of archæology and ethnography authorize or sanction the hypothesis of relations between the peoples, and how far of prehistoric migration?

There were 450 members of the congress enrolled, though not all were present.

Twenty-seven countries were represented, of which nineteen were European, six of the two Americas, and one each from Asia and Oceanica. The congress at Lisbon was nearly as large as that at Paris. It had 417 enrolled members, of which 330 were foreigners to that country.

Monsieur de Quatrefages, the president, opened the congress by an address of welcome, and recalled to his hearers, in a few words, the history of the work of Forchammer, Worsaae, and Steenstrup in 1847, making a happy accord of natural history and archeology. These were founded upon modern sciences regarded up to that time as having a relation together, but which were nevertheless united by an alliance that has become more and more fruitful. From this the past of the human race plunged in an immense unknown, far beyond the reach of history or even the most obscure legends, and embracing only the geologic times with which their investigations had to deal. These investigations were published, and soon it was recognized that one branch more had been developed on the tree of human knowledge.

M. de Quatrefages followed the International Congress of Anthropology and Prehistoric Archeology from its foundation and commencement in 1865 or 1867 through each one of its sessions. The session then opened at Paris had among the others an extreme importance. The first question on the program, "The Geology of Prehistoric Times," was a declaration of our profession of faith. In adopting the sixth question, "Our Notions Anthropologic," the congress testified that one of its subjects of investigation is attached to antiquity, which becomes an object essential to its studies, and one to be followed in all paths of the science. Comparative ethnography throws light on our primitive ancestors, while geography comes in as an important and efficient aid.

The congress in dealing with the question of fossil man would not sustain on the one part dogmatism, nor on the other philosophy. This will explain its triumphs in the different countries in which it has met.

The secretary-general, Dr. Hamy, then told of the steps which had been taken in order to protect this meeting of the congress against the difficulties encountered at Lisbon, and augmented by the death of the late secretary-general. He described step by step the action taken by the officers and original founders, and it was at last decided that M. de Quatrefages would be the president. He then named the committee of organization, and announced the bureau and council as follows:

President, M. A. de Quatrefages; vice presidents, MM. Belucci (G.), Beneden (J.-L. van), Bertrand (Alex.), Bogdanoff, Delgado (N.), Evans (J.), Hilderbrand (H.), Gaudry (Alb.), Mason (Otis T.), Muller (Soph.), Schliemann (H.), Vilanova; secretary-general, Hamy (E. T.); secretaries, MM. Boule (M.), Cartailhac (Em.), Deniker (J.), Fraipont (J.), Vasconcellos-Abreu Verneau (Dr.); council, MM. Benedikt, Cotteau, Gosse (Dr.), Hovelacque, Lumholtz, Netto (Ladislas), Odobesco, Riedel (J. F.), Schmidt (Valdemar), Szabo (de).

The first question proposed by the committee of organization was: "The Cutting and Filling of the Valleys, the Filling of the Caverns, and These in Their Bearing upon the Antiquity of Man."

M. Gaudry was the reporter. "It is not certain," said he, "that in our country man has lived a long enough time that the contemporaneous animals of his antiquity should produce the notable transformation which would serve as datum points. The savants having the greatest experience with the objects made and used by early man are not in entire accord." A good thing from which to determine successive stage of man during the prehistoric times is stratigraphic geology. There are three points in the Plistocene geologic period which are particularly important to establish the age of the strata which contains the traces of man:

1. The glacial and interglacial formations; example, Rixdorf. The observations in divers places in Germany and in England demonstrates that there have been several interglacial formations.

2. The great Glacial age. In England and in Norfolk the boulder clay, that is evidence of the grand Glacial epoch, is above the forest beds. In consequence, the depots at Chelles and Montreuil, which contain the animals of a warm temperate climate, do not correspond with the earlier epoch of Plistocene that followed the age of the forest bed. M. Gaudry supposed this to be a depot of the interglacial age of Rixdorf; and that it is, in any event, a Plistocene deposit, not relatively of antiquity.

3. The cutting of the valleys. The theory of Prestwich was that the Plistocene deposits, the most elevated, are the most ancient. In general this ought to be true in France. The locality of Vaucresson, 150 metres above the sea, of Montreuil-sous-Bois, 100 metres, both of a Quaternary period, very ancient, contemporaneous with the grand glaciers of the north of Europe, and characterized by abundant remains of reindeer, mammoth, and the wooly rhinoceros associated with chipped flints, are illustrations. The Chellèen of Bas Montreuil, and of Chelles with deer, *Rhinoceros merkii*, *Elephas antiquus*, are grand interglacial depots, during which the climate became warmer, and the melting of the gigantic masses of glacial ice produced immense erosion. Finally, M. Gaudry believed that the alluvium of the lower level, where they find the mammoth, reindeer, and the *Rhinoceros tichorhinus*, represents a return of the cold.

It was contested that if the valley of the Seine was cut in the beginning of the Quaternary epoch, the Chellèen ought to be more ancient than the depot of Haut-Montreuil. It was necessary that the stratigraphic geologist should mark in a precise and indisputable manner the age of the cutting and the depots of our valleys of the Seine.

Professor Geikie, the Scotch geologist, sent a paper on this subject, which was read. The relative positions of the fluvial strata of a valley do not necessarily indicate their antiquity, and the elevated strata are not necessarily the most ancient. In certain cases there have been grave exaggerations of fluvial cutting accomplished during the Pleistocene times. Our grand valleys in Scotland were cut before the Glacial period, and at an epoch which M. Geikie does not dare to fix with precision. These valleys continued to be cut during the Pleistocene period. Those which are in the region covered by the glaciers have naturally escaped this action. As for the levels of the gravels, the inferior or lower ones simply indicate a normal state of the water-course, as the superior or higher ones testify to the torrential action of the river. We do not possess any serious or certain knowledge that will permit us to calculate the degree of cutting operation in the valleys of the northwest of Europe during the time these regions were occupied by paleolithic man. We can only affirm that the cutting is the result of alluvial action very much prolonged.

Mr. Geikie sent a second paper on the periodicity of glacial phenomena. He did not enter into the question as an argument. He simply referred to his two works in which the question had been argued at length: "The Great Ice Age," and "Prehistoric Europe," and said he was content with conclusions he had therein announced in favor of that periodicity.

M. Adrien de Mortillet was of the opinion that the theory of the three levels, the higher, the middle, and the lower of Prestwich, came from Belgrand. This theory was not affected by the fact that there had been found at the bottom of the gravel the bones of the *Rhinoceros merkii* and fossil animals which belonged to the Chellèen epoch of the Paleolithic age. Monsieur van den Broeck refused his adhesion to the last conclusion, and declared that if true it revoked the laws of nature. He said if these lower deposits contained the ancient fossils they must have been redeposited, and these, therefore, were valueless as to the question of their antiquity. He insisted upon the importance, for the purposes of study of primitive archeology, and for the determination of the age of the objects of human industry found in the alluvial deposits, of the superficial strata of the soil and the infiltration of the water to the lower strata, by which the latter were changed in their character and appearance.

Dr. Gosse presented certain Chellèen implements, the first of this type found in Switzerland, and with them charts of the Lake of Geneva, which showed successive stages by which the alluvium was deposited, and which corresponded in the level with others in which had been gathered the mammoth, reindeer, and below all, Roman antiquities.

M. Cartailhac doubted whether this implement was Chellèen.

Mr. John Evans visited, now thirty years ago, Saint Acheul, in company with Prestwich, and he adopted with all his heart that which had been said by that great geologist. The paleontologic evidences are uncertain and sometimes founded in error. At Norfolk, for example, there is in one stratum *Elephas antiquus*, in the same the *primigenius*, and it is impossible to establish in the stratum a proper division.

M. Gabreil de Mortillet defended the geologists against the reproach of neglect in investigations into the prehistoric. The cutting of the valleys is a question difficult to solve. The wisest man with the most extensive knowledge seems unable to harmonize all the facts of geology.

It can only be done by extensive acquaintance with facts. The Tertiary plateau of Paris at the beginning of the Miocene was horizontal and intact and 170 metres in elevation. It was profoundly affected by the Seine during the Tertiary, which made a colossal cutting compared with that of the Plistocene, which in Paris is only 40 metres in elevation. The movements of the soil explain perfectly the conclusions as to the filling of the valleys at the periods of depression, and of cutting during the periods of elevation.

Monsieur Mourlon, of Brussels, said that diversity of views and differences of opinion proved that the solution of this problem is yet far distant. He recommended that each person should take up his own proper study in his own country, and pursue it without any preconceived ideas or opinions. He explained the situation at Mons and Ixelles as identical with that of Igtham presented by Mr. Prestwich, and said that the deposits were doubtless Pliocene, yet they found chipped flints of the Moustier type.

M. Marellin Boule said that he had studied the fossil bones of Ixelles at the museum, and that all the species belong to the fauna of the *primigenius*. The deposit at Ixelles is probably not older than the commencement of the Plistocene as we know it in France. In any event, it does not belong to the Pliocene.

Gosselet, of Lille, objected that Mr. Prestwich was too uncertain. He always said "It is perhaps" pre-Glacial, etc. Yet M. Gosselet was opposed to M. Mourlon in his opinion that the deposits at Mons were anterior to the Plistocene.

M. Max Lohest said that none of the numberless depots yet discovered in the caverns were characteristic of any determined geologic epoch. Fauna of the mammoth and *Rhinoceros tichorhinus* are found as well in the red plastic clay, the rolled pebble, and the stratified mud as in the clay full of sharp stones which came from the roof of the cavern. He attacked the theory of M. Dupont, and declared that the height of elevation of a cavern above the level of the river was not evidence of its antiquity, and that the formation of the Belgium valleys had begun anterior to the Cretaceous epoch. The clay of the plateaux in the east of Belgium that came from the cutting of the valleys was deposited probably anterior to the age of the mammoth. On the arrival of man the face of the country presented much the same appearance as now.

Monsieur van den Broeck, of Belgium, responded to his colleagues, MM. Mourlon and Max Lohest. In his opinion the Belgium valleys were not cut until after the Pliocene, because we found the sediment of that epoch crowning the hills and plateaux in the neighborhood of the valley. In the valley of the Meuse, M. van den Broeck cited evidence to prove that the lower levels were much more recent than the high levels. Localities cited by M. Mourlon were not pre-Plistocene, because both were situated on the flank of the valley, and not on the Plistocene of the plateaux. The fauna of a cavern could only be the same as that of the valley.

Mr. John Evans was in accord with those who said that the great valleys had been cut before the Plistocene, but we should not forget that there may be valleys of all epochs. He approved the opinions and conclusions of Prestwich, but only in regard to that which concerns the Plistocene, and said that neither himself nor other geologists of England could follow Mr. Prestwich in his theory of the worked flint being pre-Glacial. In his opinion the deposit of the worked flint at Igtham was a superposition well established.

Mr. Thomas Wilson said a few words upon the progress made by American geologists on the subject of the Plistocene period and the antiquity of man. He spoke of the interest in that subject in his country. He showed to the congress some of the quartzite and argillite implements which belong to the paleolithic period, and had been discovered on the surface in his country, as had been those Chellèen implements found by Mr. Prestwich at the locality of Igtham in Kent. On the subject of the cutting of the valleys and their subsequent filling, he remarked that the rivers of France and England especially were of such short length that it was possible the operation may not have been carried out to its conclusion by the courses of nature, and he invited the geologists of Europe who were interested in studying this question not to neglect the opportunity of visiting the United States upon the occasion of the next geologic congress, to be held in 1891, that they might investigate our rivers; those flowing from the mountains to the Atlantic seaboard, some of them passing through the glacial moraine, like the Connecticut, Hudson, and Delaware, others others coming from mountains unaffected by the glaciers, as the Susquehanna, Potomac, and James; or go to the west, where were to be found rivers from 1,000 to 4,000 miles in length, as the Ohio, Cumberland, Tennessee, Mississippi, and Missouri, on the banks of which are to be found cut the same kind of caverns as those of Belgium, as were also the terraces of the high, low, and middle levels of Prestwich, Belgrand, and Mortillet; they were thus to be found, not in isolated positions, but stretched out for hundreds of miles. The earth cut from one place would be carried to another further down, and so deposited and redeposited many, many times before reaching the ocean.

Monsieur Judge Piette described at length the position, condition, and geologic formation of the great cavern of Mas d'Azil, Ariege; how it was found in a tunnel made under or through the mountain by the passage of the river l'Arize, and how it had been inhabited by prehistoric man during all epochs. He had visited this cavern, which is a stupendous and wonderful work of nature, his interest being correspondingly excited because in it were to be found in great quantities and great thickness, in different parts of the caverns the evidence of the occupation by prehistoric man in all his epochs; the paleolithic, the earliest cavern epoch, down to and including the neolithic and even bronze age.

M. Chambrun de Rosemont and Madame Clemence Royer gave their opinions. Monsieur Gosselet confined himself to the question which was being discussed, and gave it as his opinion that there were to be found the following phenomena in the cutting of the valleys: 1. A first cutting anterior to the deposit of the lower or earliest Plistocene. 2. A second cutting posterior to the deposit of the yellow clay, but anterior to the upper diluvium. These repose indifferently on the strata of the lower Plistocenc, and which may have been more or less eroded. Sometimes the gravels of the two epochs are superposed. 3. A third cutting posterior to the Plistocene period. Sometimes this finds the Plistocene in the valleys; but it is not infrequent to find the Tertiary and even the secondary deposit exposit exposed by the cutting. 4. After this last cutting the water of the rain and the rivulets produced a heterogeneous clayey deposit that covered the slopes and descended even to the bottom of the valleys. In this one can find the *débris* of the age of polished stone, of Roman objects, and others similar. The relations of the divisions in the fauna and the human industry of the Plistocene epoch have not been determined.

M. de Szabo described the Plistocene formations in Hungary.—THOMAS WILSON. *(To be continued.)*

The Munich Association for the study of anthropology, ethnology, and prehistorics is publishing its transactions in an organ called *Beiträge zur Anthropologie und Urgeschichte Bayerns*, which has now reached its ninth volume. Professors J. Ranke and N. Rüdinger are the editors, and a series of most important papers have filled its pages since publication began.

The fourth number of Volume VIII., which is now before us, contains an elaborate inquiry into the racial groups now forming the population of the Bavarian province Oberfranken, northeastern part, composed by Ludwig Zapf. The article is accompanied by a map showing that the district where the rustics have preserved the customary *wendic dress* is in part identical with the district embracing the dark-hued color of the eyes, though this extends somewhat further to the south. The author bases his ethnographic division upon the linguistic facts observed there, *four* dialects being spoken in that section.

In the same number Dr. Höfler discusses Bavarian dialectic terms for diseases and for the parts of the human body, and Hugo Arnold gives an illustrated report on recent excavations made at Pfünz and Faimingen, which resulted in the discovery of Roman temples erected for the worship of Jupiter Dolichenus and of idols representing this deity.

The numbers 1 and 2 of Vol. IX. of the *Beiträge* are united in one fascicle, and contain in eighty-five pages much that is of interest, though the contents refer more to local than to general topics of archeology and ethnology. Ten plates illustrate the articles, of which may be mentioned as the most likely to attract attention: Oldest Inhabitants of Southern Bavaria, by Sopp; Prehistoric Sketches from the Tract between Inn and Salzach Rivers, by Weber; The Home of the Bajuwarian Landholder, by Tresel; On the Difference of Age in Population Statistics, by G. von Mayr; Hill Tomb near Dechsendorf, by A. Erhard; New Prehistoric Discoveries in Bavaria, by Weber. The appendix of thirty-four pages gives the minutes of the transactions of the Anthropologic Society of the Bavarian capital during the earlier months of 1889.

The Map of Prehistoric Bavaria, in fifteen sheets, the laborious work of Prof. F. Ohlenschlager, is now completed, for the last three sheets have just been distributed with the third number of Vol. IX. to the subscribers. The official removal of the author from Munich, the capital, to other functions in a Rhenish province of the same kingdom has retarded the completion of the map for more than two years, and the publication of the whole map was effected in the period from 1879 to 1890. The important discoveries made during the latest years made it possible for archeologists to establish a relative chronology for the objects of the Hallstatt and La Tène epoch, and this circumstance has largely enhanced the value of the map, the study of which is facilitated by copious indexing. The colored signs pointing to the places of discovery are twenty-three in number. The topographic data are all entered upon the military survey map of Southwestern Germany.